usual vigor. Mechanical engineering has lost about 21 per cent. This is a study that should be stimulated by the war. In this work Professor Miller, head of the department, has undertaken for the U. S. Shipping Board the management of the schools for marine engine-room officers in the principal ports in the country.

WORK OF THE NATIONAL RESEARCH COUNCIL

UPON recommendation of the National Research Council Dr. Augustus Trowbridge, of Princeton University, and Professor Theodore Lyman, of Harvard University, have received commissions in the Signal Corps, U. S. A., for work in sound ranging. They have sailed for France to investigate conditions at the front in this subject. The sound ranging service which will be developed under their direction will utilize in the near future more than fifty men. Captain Horatio B. Williams is in charge of the development work in this country during Major Trowbridge's absence.

A meteorological service has been organized under the Signal Corps, U. S. A., in which about one hundred physicists and engineers will be engaged in aerological observational work under the direction of Dr. William H. Blair, of the U. S. Weather Bureau, who has received a commission of major and has sailed for France to investigate conditions abroad. Forecasting work for the American Expeditionary Force in France will be in charge of Mr. E. H. Bowie, of the U. S. Weather Bureau, who has likewise received a commission of major in the Signal Corps and is already on his way to France. Major Bowie will be assisted by Mr. R. Hanson Weightman, of the U. S. Weather Bureau, who has received a commission as lieutenant in the Signal Corps.

Professor Charles E. Mendenhall, of the University of Wisconsin, has received a commission of major in the Signal Corps, U. S. A., and has been placed in charge of the development of aeronautical instruments.

All of the work of these services, sound-ranging, meteorology and aeronautical instruments, is included within the scope of the Science and Research Division of the Signal Corps, which in accordance with a recent order of the chief signal officer has been established and placed under the direction of the National Research Council, of which Major R. A. Millikan is the executive officer. The functions of this division of the Signal Corps are two-fold, namely: (1) to furnish personnel of the research sort to the other divisions when the situation warrants the assignment of men of this type to these divisions, and (2) to have a personnel of its own which maintains intimate contact with all research and development work in other divisions, and distributes research problems to university, industrial and governmental research laboratories with which it is associated. Similar, though in some cases less formal, relations have been established with other technical bureaus of the War and Navy Departments.

Upon request of the French High Commission a number of American physicists and chemists are being sent to France to assist in various war problems in which technically trained men are needed. Except in certain cases, the Interministerial Commission in Paris will assign them to work in university laboratories and in technical services of the government. Upon recommendation of the National Research Council the following men are receiving commissions in this connection and a number of them have already sailed for France:

Professor R. W. Wood, of Johns Hopkins University, major in the U. S. Signal Corps.

Messrs. Roy W. Chestnut, Leonard Loeb and Samuel Sewall, lieutenants in the U. S. Signal Corps.

Professor Edward Bartow, of the University of Illinois, major, and Professor Reston Stevenson, of the College of the City of New York, captain in the U. S. Sanitary Corps.

Messrs. Ralph L. Brown, of the University of Chicago, George Scatchard, of Columbia University, and Kirke W. Cushing, of Western Reserve University, lieutenants in the U. S. Sanitary Corps.

SCIENTIFIC NOTES AND NEWS

THE trustees of Columbia University have dismissed Professor J. McKeen Cattell from the chair of psychology which he has held since 1891, on account of a letter which he

addressed to members of the Congress, asking them to support a measure which had been introduced against sending conscripts to fight in Europe against their will. Professor Cattell has given out a statement in which he says that he is opposed to war and to this war, but that he has engaged in no agitation against the government, and has not written anything opposing conscription or against sending an army abroad. He maintains that forcing "conscientious objectors" to fight in Europe is not only contrary to democratic principles, but also subversive of the efficiency of the army and of national unity. He claims that it is the duty as well as the constitutional right of a citizen to petition the government to enact legislation believed by him to be for the national welfare. For a university to dismiss a professor for doing this is both unjust and illegal. Under the circumstances Professor Cattell believes that it may be in the interest of Science and of the American Association for the Advancement of Science for him to retire from the editorship which he has held for twenty-two years. He has addressed a letter to the chairman of the Committee on Policy of the Association requesting that a successor be selected.

At Peking the cornerstone of the hospital and medical college of the Rockefeller Foundation was laid on September 24 by Fan Yuen-Lien, minister of education. Dr. Paul Reinsch, the American minister, presided at the exercises, which were attended by Admiral Austin Knight, commander of the American Asiatic fleet. Dr. Frank Billings, chief of the American Red Cross mission to Russia, who is now in Peking, made the principal address.

Professor John S. Shearer, of the department of physics of Cornell University, has received a commission as major in the National Army. Since the declaration of war, Professor Shearer has been on duty at the Cornell University Medical College in New York City, instructing officers of the Medical Corps and the Medical Reserve Corps in roentgenology, and conducting conferences for the standardization of X-ray apparatus.

Leaves of absence for the year 1917–18 were granted by the administration committee of Cornell University to Professor George Young, Jr., of the college of architecture, and Professor Ernest Merritt, of the department of physics, who are engaged in work for the government, to L. L. Silverman, instructor in mathematics, who is in the service of the committee of public safety of the state of Massachusetts; to Professor Samuel N. Spring, of the department of forestry, in order that he may serve as a captain in the 20th Engineer (Forestry) Regiment, and to Professor Allyn A. Young, of the department of economics, to permit him to serve as chief of war trade statistics in the Division of Export Licenses at Washington.

At the University of North Dakota there has been established a research committee to cooperate with the National Research Council in connection with the advancement of a variety of problems of scientific and practical interest. The committee consists of Dr. Earle J. Babcock, chairman, dean of the engineering colleges and professor of industrial chemistry; Dr. J. M. Gillette, professor of sociology; Dr. George A. Abbott, professor of chemistry; Dr. A. G. Leonard, professor of geology, and Dr. Charles E. King, professor of physiology.

J. W. Bailey has resigned an assistant professorship in zoology at the Agricultural College of Mississippi to undertake research work for the U. S. Department of Agriculture, with headquarters at Tempe, Arizona.

Dr. Minnie A. Graham has resigned her position as instructor in analytical chemistry at Wellesley College to act as abstracter for the research department of the General Chemical Company in New York.

Dr. Herbert C. Moffitt, dean of the University of California Medical School, has been called into active service as a major in the Medical Officers' Reserve Corps, and is stationed at the Army Hospital at San Antonio, Texas.

Dr. W. A. Perlzweig, assistant professor in biochemistry in the Creighton University College of Medicine, has been appointed first lieutenant in the Sanitary Corps of the army.

AT the opening exercises of Columbia University, Dr. Cassius J. Keyser, of Columbia University, gave the address, the subject of which was "The enterprise of democracy." The address of the College of Physicians and Surgeons was given by Dr. Hans Zinsser, professor of bacteriology, his subject being "Medicine, the great opportunity."

SENOR AUGUSTO VILLANUEVA, Santiago de Chile, has become a member of the Ramsay Memorial Committee for Chile.

EDWARD BOOTH, assistant professor of chemistry in the University of California, died at his home in Berkeley on August 23.

LIEUTENANT-COLONEL T. H. BOARDMAN, who had charge of the work in physics at Christ's Hospital, London, died of wounds on August 4 while on active service in the army.

DR. J. R. TOSH, lately assistant professor of zoology in St. Andrews University, has died in Mesoptamia from "heat stroke."

AS already announced, the thirty-second general meeting of the American Electrochemical Society is being held in Pittsburgh from October 3 to 6. *The Metallurgical and Chemical Engineering* states that a special feature of the meeting will be a series of papers and discussions on electrochemical war supplies, and the part the electrochemical industry will play in the present struggle. The committee in charge is outlining an elaborate program of technical sessions, visits to industrial plants and entertainment features. It invites the delegates to arrive in Pittsburgh on Wednesday, October 2, so as to meet informally and enjoy some recreations which have been planned for them. On Thursday, October 3, a regular meeting of the society will be held in the morning, with optional excursions to industrial plants in the afternoon. In the evening an illustrated lecture on a semi-technical subject will be given. On Friday, October 4, a symposium on electrochemical war supplies will be held in the morning, followed by excursions to industrial plants in the afternoon. A subscription dinner will be held at the William Penn Hotel in the evening. Saturday, October 5, will be devoted to an all-day excursion, on a special train with complimentary luncheon, to several industrial plants in the Pittsburgh district."

ACCORDING to the London correspondent of the *Journal* of the American Medical Association official statistics show that on an average there has been an increase in food prices of 104 per cent. compared with July, 1914, the month before the war began. The increase varies from 65 per cent. in the case of fresh butter to 191 per cent. in the case of certain parts of frozen mutton. The average price of bread—23 cents for the 4-pound loaf—is double that in July, 1914, and flour shows a proportionately greater advance, amounting to 109 per cent. The price of granulated sugar had risen over the war period from an average of about 4 cents to nearly 12 cents per pound, but increased duty accounts for about 2.5 cents of the rise. The average price of cheese is slightly more than double than in July, 1914; that of eggs, slightly less than double. The price of tea is 74 per cent. higher, but about half of the advance is due to increased taxation. Butter and margarin show increases approximating to 65 and 74 per cent., respectively, over pre-war prices. Milk prices had risen 60 per cent., or 4 cents per quart. In arriving at the general percentage increase, the several articles are weighted in accordance with the proportionate expenditure on them in pre-war family budgets, no allowance being made for the economies resulting from changes in dietary which have been effected since the beginning of the war, especially in those families in which the total income has not been increased by advances in rates of wages, greater regularity of employment, increased output, or the working of overtime. As an illustration of possible economies in this direction, if eggs are omitted from the dietary, margarin substituted for butter, and the consumption of sugar and fish reduced to one half of that prevailing before the war, the general percentage increase since July, 1914, instead of being 104, would be 72. During last month alone the general level of retail prices of the principal articles of food rose about 1 per cent. The prices of British beef increased

about 5 per cent., and those of other meat from 3 to 4 per cent. Bacon and fish showed some decline in price as compared with a month ago.

In connection with work in food conservation the railway freight claim agents in Texas are opening the way for cooperation with other agencies interested in food production. On Saturday, August 4, representatives of three of the important railways in Texas met in conference with Dr. J. J. Taubenhaus, of the Texas Experiment Station, and Dr. F. H. Blodgett, of the Agricultural Extension Service, to discuss methods by which losses in transit may be reduced in shipments of perishable farm products. The matter was discussed both from the point of view of the claim agent in reducing the financial expenditure in settling damage claims on the part of the shippers and others, and from the point of view of food conservation, since the damaged products, for which claims may be filed and paid, draw from the food supply of the country with no benefits to any one since even damage claims only partially represent the true value of the products concerned. Plans were outlined for the investigation of the unknown factors involved by the pathologist of the Experiment Station, and for the cooperation between the Extension Service and the railway agricultural agencies to disseminate information in regard to the different modes of handling produce to eliminate losses through shifting of cargo and other causes which are already well understood but not always carefully practised.

It is stated in the *Boston Medical and Surgical Journal* that the thirty-two new hospitals which are being built by the medical corps of the army for the care of the National Guard and National Army camps will cost about $14,500,000. The aim of the medical department is to have hospital provision for 5 per cent. of the enlisted force by fall, and then extend it to 10 per cent. Abroad, facilities for 20 per cent. of the American expeditionary forces will be available. Provision will be made at the cantonments in this country for 3 per cent. of the troops in each camp. Each hospital with the space reserved for extensions will require sixty acres. The buildings will be 24 feet wide, the length varying to meet the needs. A ward about 157 feet long will accommodate 32 beds. A cantonment hospital on a basis of 1,000 beds will include about 70 buildings, if each ward is considered as a building. Adequate laboratory facilities will also be provided, and plans are being made to appoint permanently to the staffs of the hospitals, men especially trained to do laboratory work in order that careful tests may be made of each and every soldier for tuberculosis, intestinal infections, and all other infectious diseases.

In Kansas a deep well struck rock salt at 690 feet below the surface and penetrated 600 feet of rock salt in beds from 5 to 60 feet thick, according to the United States Geological Survey. A large area in this state is underlain by salt, which is mined by many shafts and obtained by pumping brine. Drilling for oil in Texas and Louisiana has revealed the presence of tremendously thick deposits of rock salt at a depth of a few hundred feet. Thicknesses of 2,000 feet are common, and one drill hole passed through more than 3,000 feet of rock salt. Most of the salt made in Utah is produced by evaporating the waters of Great Salt Lake, and in California by evaporating sea water. These sources are inexhaustible, and the limit of production by solar evaporation will therefore never be reached.

The Electrical World states that for several years past from fifteen to thirty engineering teachers have spent part of the summer vacation at the East Pittsburgh works of the Westinghouse Electric and Manufacturing Company in getting acquainted not only with the apparatus manufactured by this company, but also with its engineering designers, commercial engineers and works executives. This year there were twenty-four men from seventeen different states and from Canada and Japan, representing twenty-three different engineering schools. Most of their time is spent on actual work, either on assembly or test floor or in the engineering offices, but part of the time is given up to a series of meetings, which include inspection and discussion of apparatus being manufactured, talks on engi-

neering opportunities and requirements, discussions of teaching problems, excursions to other plants and social meetings. This course gives engineering teachers an opportunity to become acquainted with the latest developments in electrical power apparatus, with shop methods in use in large manufacturing concerns, and to meet and exchange ideas on teaching subjects with other engineering teachers of experience. Since the Westinghouse company draws men from engineering schools, it is of advantage to it that students may know not only of the opportunities open but of methods of working efficiently in its organization.

UNIVERSITY AND EDUCATIONAL NEWS

DR. JOHN R. MURLIN, for eight years assistant professor of physiology in the medical school of Cornell University, has been appointed director of the new department of vital economics at the University of Rochester. This department is being organized from funds made available by the will of Lewis P. Ross, whose will gave to the university the residuary estate of more than $800,000, the income only to be used "to the end that human life may be prolonged with increased health and happiness." The trustees were instructed to expend that income for two purposes—to contribute toward the support, improvement, and extension of the department of household economics of the Mechanics' Institute of Rochester, and to establish in the university a department of vital economics. Dr. Murlin is now a major in the Sanitary Corps of the national army, and head of the food division in the surgeon general's office.

THE school of engineering of the Pennsylvania State College has the largest freshman enrollment in its history, numbering 271 as compared to 210 at this time last year. The upper classes are from 50 to 75 per cent. of normal, due to the large number who volunteered last spring.

PROFESSOR GEORGE H. PERKINS, dean of the College of Arts and Sciences of the University of Vermont and professor of natural history, has been designated as acting president for the next year. President Guy Potter Benton has been granted a year's leave of absence by the trustees in order to comply with the request of the National War Work Council to aid in the coordination and direction of the council's work in Europe. President Benton sailed early in September in charge of a force of thirty Young Men's Christian Association men.

ALBERT RUSSELL MANN, professor of rural social organization, and acting dean has been appointed dean of the New York State College of Agriculture at Cornell University.

DR. C. P. FITCH, of the New York State Veterinary College, has been appointed professor of comparative pathology and bacteriology and chairman of the division of veterinary medicine in the department of agriculture, University of Minnesota.

THE following promotions have been made at the school of medicine, Western Reserve University: Paul J. Hanzlik, to be assistant professor of pharmacology; Cyrus Hartwell Fiske, to be assistant professor of biochemistry; Roy Wesley Scott, to be associate in physiology; Julius Moses Rogoff, to be senior instructor in experimental medicine; Roy Bartlett Metz, to be associate in ophthalmology; Joseph Edgar McClelland, to be instructor in pediatrics; Carlos Eugene Pitkin, to be instructor in diseases of the nose, ear and throat; Chester Dale Christie, to be instructor in medicine; Marion Blakenhorn, to be instructor in medicine.

PROFESSOR N. C. CURTIS, of Tulane University, has been appointed associate professor of architectural design in the University of Illinois.

DR. R. M. STRONG has been promoted from associate professor of anatomy to professor of microscopic anatomy in the medical school of Vanderbilt University.

DR. O. VAN DER STRICHT, professor of histology and embryology at Ghent, Belgium, who for the past two years has held the post of fellow in cytology in the anatomical laboratory of Western Reserve University, has been